



The Number One Cause of Death: Heart Disease

“HSR&D is working to improve the level of care for VA heart patients by examining the quality, cost, access, and outcomes of care related to heart disease.”

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What types of heart disease are most prevalent among veterans?

Two of the most prevalent types of heart disease among veterans and the nation include ischemic heart disease (IHD) and chronic heart failure (CHF). Despite the dramatic decrease in IHD mortality rates over the last three decades, it remains the number one cause of death in the United States. Ischemic heart disease, which encompasses acute myocardial infarction (AMI) and unstable angina, is also one of the most frequent indications for medical care in the VA. For example, in 1997 there were more than 150,000 VA hospital admissions for IHD.¹ Chronic heart failure is also highly prevalent, affecting 2 to 3 out of every 100 adults age 65-74. And the incidence of CHF is increasing in the U.S., partly due to an aging baby-boom population.² Among veterans, CHF is a prevalent and costly condition.

How does heart disease impact veterans' health?

Ischemic heart disease can significantly affect one's quality of life. For example, in an ongoing study of veterans discharged with acute myocardial infarction or unstable angina, 51% experience chest pain three times per week or more, and 15% experience chest pain on a daily basis. Further, persons with chronic heart failure report among the worst physical and social functioning.³ Shortness of breath, fatigue, and poor exercise tolerance are frequent symptoms of heart failure. And CHF is a lethal disease. About two-thirds of veterans with CHF die within five years of their initial hospitalization.²

Why is heart disease an important issue for VA managers?

Hospital and resource use associated with heart disease is tremendous. For example, in 1996 the typical patient with CHF who received VA treatment had 14 hospital days per 12 months of follow-up care, 6-7 visits with the primary care physician, two urgent care visits, and 14 additional outpatient visits for testing and consultation.² VA health care resource use for veterans with IHD is also intense and costly – over \$100 billion in indirect and direct costs annually. In FY97 there were 15,182 hospitalizations for acute myocardial infarction and 23,033 for unstable angina, with a mean cost of \$18,485 for a patient with AMI, and \$34,491 for patients with unstable angina who had bypass surgery.¹

Therapies that can relieve or control symptoms of these heart conditions are available, yet are often underused. A national survey showed that in 1995 only 36-40 percent of patients with heart failure received pharmacologic treatment with ACE inhibitors. In addition, significant proportions of patients do not receive advice on salt restrictions and/or have poorly controlled high blood pressure.² And despite recently developed national practice guidelines for the treatment of IHD that have been disseminated by cardiology specialty societies and within VA, a significant number of patients are not treated with guideline recommended therapies.¹

There is a substantial amount of ongoing research on heart disease in the VA and the larger U.S. health care community. Below are recent findings from a few HSR&D studies that focus on some important issues related to the treatment and prevention of heart disease.

Lower quality of life may predict mortality in patients with coronary artery disease

Patient-reported quality of life (QOL) measures are potentially useful as predictors of outcomes. This HSR&D study examined the relationship between QOL and five-year mortality (all cause) among VA outpatients with coronary artery disease (CAD). The three VA General Internal Medicine Clinics who participated in this study were pilot sites for the Ambulatory Care Quality Improvement Project (ACQUIP). This prospective cohort study examined 1,679 VA patients with coronary artery disease who responded to ACQUIP quality of life surveys. Quality of life was measured using four scales of the Seattle Angina Questionnaire (SAQ): physical functioning, disease perception, angina frequency, and angina stability. All scales were scored 0 (worst health) to 100 (best health).

During the five year follow-up period, 28 percent of the cohort died. Patients who survived five years were stratified into two groups – those scoring greater than 50 or less than 50 on all scales. For both the physical function and angina frequency scales, patients who scored greater than 50 had significantly lower mortality. Therefore, poorer quality of life, as measured by SAQ physical function and angina frequency scales, appears to be a significant predictor of all cause mortality in veterans with coronary artery disease. Quality of life, as measured by the disease perception and symptom stability scales, did not significantly relate to risk of death. If disease specific quality of life instruments such as the SAQ can predict mortality, they can potentially be used to identify patients at risk for adverse outcomes. If identified, these patients could benefit from targeted interventions and preventive measures.

McDonnell MB, Spertus JA, Fihn SD. Quality of life and 5-year mortality among veterans with coronary artery disease: Results from the Ambulatory Care Quality Improvement Project. Journal of General Internal Medicine, 2000; 15 (supp. 1): 82.

HSR&D SDR 96-002 (randomized trial) and CSHS 91-007 (pilot study)

Exercise improves quality of life in patients with chronic heart failure

Chronic heart failure (CHF) is a syndrome of impaired ventricular function that results in symptoms such as fatigue and decreased ability to exercise. This often leads to an increasingly sedentary lifestyle and a deterioration of muscle

function for veterans with CHF. Until recently, the prescription for patients with CHF was rest and minimization of physical exertion. This HSR&D study sought to determine whether patients with CHF who completed an individualized 24-week program of cardiopulmonary training for six months would have better quality of life (QOL) than patients who did not participate in the training and, instead, met weekly with an investigator. In this study better QOL was defined by: significantly greater aerobic fitness, higher levels of daily activity, fewer symptoms secondary to CHF, greater self-efficacy, and reduced use of health care resources.

Preliminary data from this study show a 26 percent improvement in vitality (energy) in the exercising group compared to 4 percent in the control group. Further, after six weeks of low-intensity cardiopulmonary training, exercisers increased their walking duration by 26 percent compared to a 3 percent improvement in the control group. This study has the potential to promote a new mode of exercise training that could be valuable to patient rehabilitation programs, in addition to improving QOL and patient satisfaction.

Collins E, et al. Can exercise training improve QOL in heart failure patients? A pilot study. Journal of Heart & Lung Transplantation 1998; 17:78.

HSR&D NRI 95-213

Study helps VA improve patterns of care for veterans with acute myocardial infarction

Acute myocardial infarction (AMI) is a leading cause of morbidity and mortality in the US general population and among veterans. The Center for the Study of Practice Patterns in Veterans with AMI was created to conduct health services research that informs clinical policy on effective treatment for veterans with AMI. Using both administrative and clinical data sources, the AMI Center investigates variation in practice patterns in veterans with AMI who are hospitalized in both VA medical centers and Medicare-financed hospitals.

Thus far there have been several findings of note: 1) The 30 day mortality for veterans with AMI decreased by 23 percent between 1988 and 1997; 2) use of cardiac catheterization increased by 30 percent, bypass surgery by 50 percent, and coronary angioplasty by 176 percent between 1988 and 1995; 3) of VA users who were hospitalized for AMI in 1996, 70 percent were initially admitted to

a Medicare-financed facility; and 4) mortality was similar between VA users initially hospitalized in VA or Medicare-financed hospitals between 1992 and 1996. Information such as this helps policy makers, clinicians, and administrators better understand patterns of VA and non-VA care and helps establish national baseline measures that can be used to evaluate the effectiveness and quality of cardiac care for veterans.

Wright SM, Petersen LA, Daley J. Increasing use of Medicare services by veterans with acute myocardial infarction. *Medical Care* 1999; 37:529-37.

Wright SM, Petersen LA, Daley J. Availability of cardiac technology: Trends in procedure use and outcomes for patients with acute myocardial infarction. *Medical Care Research and Review* 1998; 55:239-54.

Petersen LA, Wright SM. Does the VA provide 'primary' primary care? *Journal of General Internal Medicine* 1999; 14:318-319.

HSR&D PPR 94-001; HSR&D Career Development Award, RCD 95-306; and IHD-99-001-RRQ

Evaluating VA quality of care for veterans with ischemic heart disease

VA must provide a full range of health services, such as cardiac consultation and other sub-specialty care to veterans across the nation. This HSR&D study was designed to provide timely, relevant information to administrative and clinical decision makers to assist them in providing optimal cardiac consultation in a variety of geographic areas.

Two thousand patients admitted with ischemic heart disease (half with myocardial infarction and half with unstable angina) were followed for six months post-discharge to evaluate care. Preliminary results of this observational study include information on cardiac procedures and discharge medications. For example, the rate of cardiac catheterization was 50 percent; coronary angioplasty, 18 percent; and bypass surgery, 9 percent. These rates were comparable to the private sector. Discharge medication use of guideline recommended therapies were equal or greater than non-VA patients: aspirin (87 percent), beta-blockers (71 percent), and ace inhibitors (54 percent). Results of this study will be used to evaluate cardiac procedure use and guideline compliance in veteran patients with ischemic heart disease, so optimal practice patterns may be systematized.

Every NR, et al. A comparison of the national registry of myocardial infarction with the cooperative cardiovascular project. *Journal of the American College of Cardiology* 1999; 33:1886-1894.

Every NR, Ritchie JL. Variations in the use of cardiac procedures: What is the explanation? [ed. comment] *American Heart Journal* 1999; 137:588-589.

HSR&D RCD 94-304

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1. Every NR, Fihn SD, Sales AE, et al. for the QUERI IHD Executive Committee. *Quality Enhancement Research Initiative in ischemic heart disease: a quality initiative from the Department of Veterans Affairs*. *Medical Care* 2000; 38(Suppl 6): I-49-I-59.
2. Ashton CM, Bozkurt B, Colucci WB, et al. *Veterans Affairs Quality Enhancement Research Initiative in chronic heart failure*. *Medical Care* 2000; 38(Suppl 6): I-26-I-37.
3. Stewart AL, Greenfield S, Hays RD, et al. *Functional status and well-being of patients with chronic conditions*. Results from the Medical Outcomes Study. *JAMA*. 1989 Aug 18; 262(7):907-13.

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